

Remarks

Claims 1 through 9 and 14 through 30 have been rejected on the grounds of being obvious in view of Kempfer taken with either Kirwan et al and/or Andrews et al. Claims 10 through 13 have been allowed which Applicant again acknowledges with appreciation. Reconsideration of the rejected claims respectfully is requested in view of the following additional comments.

As indicated in Applicant's previous response, Kempfer, principally relied upon in rejecting Applicant's claims, discloses and teaches a system in which a fuel cell is utilized to generate electricity which then is converted to thermal energy by a heater which then supplies such energy to a catalytic converter and a reformer. In this system, it particularly is to be noted that the means utilized to heat the catalytic converter is conversion of electrical energy supplied by the fuel cell, into thermal energy, by the heater, and not the thermal coupling of the heat energy produced by the reformer with the media of the engine or exhaust line.

Kirwan et al discloses and teaches a system which utilizes a fuel cell to generate a reformate consisting of a gaseous blend of hydrogen, carbon dioxide, nitrogen and certain trace components, and supplies such reformate to the engine and the exhaust line of the engine connected to the catalytic converter. In this arrangement, it is to be noted that a reformate is supplied to the engine and the exhaust line, and not thermal energy generated by the reformer thermally coupled to the engine or exhaust line.

The Andrews et al application discloses and teaches a system and method for heating the engine and the catalytic converter of the engine to operating temperatures by supplying hydrogen generated by an electrolyzer to a stream of oxygen, resulting in an exothermic oxidation of the hydrogen to produce thermal energy.

In contrast to the various arrangements disclosed and taught in the aforementioned references, the arrangement and method recited in the rejected claims provides for extracting heat energy produced by the reformer and transferring such energy through a heat exchanger directly to the engine intake, the exhaust line or a return line of the engine. None of such references either singularly or in combination discloses or teaches extracting thermal energy from the reformer and supplying it to the intake, return line or exhaust of an engine.

Neither Kirwan et al nor Andrews et al teaches a modification of Kempfer to arrive at the claimed invention. Furthermore, the proposed modification of Kempfer as purportedly taught by Kirwan et al or Andrews et al would result in a complete reconstruction of Kempfer, clearly inappropriate.

In view of the foregoing, it respectfully is requested that the rejection of claims 1 through 9 and 14 through 30 be withdrawn, such claims be allowed and that the application be passed to issue.

The Commissioner is hereby authorized to charge any underpayment of fees or credit any overpayment of fees in connection with this communication to Deposit Account 19-4375.

Respectfully submitted,



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